

REMARKS

This is a full and timely response to the outstanding FINAL Office Action mailed September 9, 2008. The Examiner is thanked for the thorough examination of the present application. Upon entry of this response, claims 1, 4-15, and 18-22 are pending in the present application. Applicants respectfully request consideration of the following remarks contained herein. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

I. Summary of Telephone Interview with Examiner

Applicants wish to thank Examiner Faragalla for the time spent with Applicants' representative Jeffrey Hsu during a telephone interview conducted on October 27, 2008 regarding the above-identified Office Action. During the interview, the rejection under 35 U.S.C. §103(a) set forth in the FINAL Office Action was discussed. In particular, the rejection in view of the *Vialle* reference (EP 1 220 485 A1) was addressed. While no agreement regarding allowability was reached, Examiner Faragalla tentatively agreed with the Applicants' arguments regarding interpretation of the *Vialle* reference. The remarks set forth herein are consistent with those raised during the discussion with Examiner Faragalla.

I. Response to Claim Rejections Under 35 U.S.C. § 103

The USPTO has the burden under section 103 to establish a *prima facie* case of obviousness according to the factual inquiries expressed in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). The four factual inquiries, also expressed in MPEP §2141, are as follows:

- (A) Determining the scope and contents of the prior art;
- (B) Ascertaining the differences between the prior art and the claims in issue;
- (C) Resolving the level of ordinary skill in the pertinent art; and
- (D) Evaluating evidence of secondary considerations.

For a proper rejection of the claim under 35 U.S.C. §103, the cited combination of references must disclose, teach, or suggest all elements / features of the claim at issue. See, e.g., *In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988) and *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981). Claims 1, 4-8, 10-15, 18, 19, 21 and 22 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Boer et al.* (U.S. Pub. No. 2004/0101035, hereinafter "*Boer*") in view of *Girardeau et al.* (U.S. Pat. No. 7,099,398, hereinafter "*Girardeau*") and further in view of *Vialle et al.* (EP Pat. 1 220 485 A1). Claims 9 and 20 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Boer*, in view of *Girardeau*, further in view of *Vialle*, further in view of *Adachi* (US Pub. No. 2001/0022806). For at least the reasons set forth below, Applicants traverse the rejections set forth.

A. Independent Claims 1 and 11

Applicants respectfully submit that independent claim 1 patentably defines over *Boer*, in view of *Girardeau*, further in view of *Vialle* for at least the reason that the combinations fail to disclose, teach, or suggest the features emphasized below in claim

1.

Claim 1 recites:

1. A method for adjusting a transmission rate of a wireless communication system comprising a transmitter and a receiver, the method

comprising:
transmitting a plurality of transmitted packets at the transmission rate by the transmitter;
receiving a plurality of received packets corresponding to the transmitted packets by the receiver;
determining a state parameter according to at least a characteristic determined by the transmitted packets and the received packets; and
adjusting the transmission rate according to the state parameter,
wherein the characteristic is determined according to a number of the transmitted packets and a number of the received packets,
wherein the state parameter is a ratio determined by dividing the number of the received packets with the number of the transmitted packets.

(Emphasis added). In rejecting claim 1, the Office Action concedes that the *Boer* and *Girardeau* references fail to disclose the feature emphasized above. (Office Action, page 4). The Office Action alleges, however, that the *Vialle* reference discloses this feature. Applicants respectfully disagree. In alleging that *Vialle* discloses a state parameter that is a ratio determined by dividing the number of the received packets with the number of the transmitted packets, the Office Action refers to the Abstract and to paragraphs 20-21 in *Vialle*. In particular, the Office Action asserts that *Vialle* discloses that "[t]he re-transmitted packets are then received. Channel observations ($p(y \text{ divided by } x, \alpha)$), where y is the received symbol, x is transmitted symbol and α is the Raleigh fading." (Office Action, page 5). As discussed during the interview, Applicants object as the Examiner's interpretation of the following expression from the *Vialle* reference is misplaced:

$$p(y/x, \alpha)$$

While Applicants agree that y represents the received symbol and x represents the transmitted symbol, the expression above represents a conditional probability and does not represent " $p(y \text{ divided by } x, \alpha)$ " as asserted by the Examiner. First, *Vialle* explicitly refers to the expression above as a "conditional probability." (See paragraph 0019.) Further, as one of ordinary skill in the art will appreciate, the expression " y/x " in the function " $p(\)$ " above is more properly interpreted as "the conditional probability (distribution) of y given x " or "the probability of event y given the occurrence of event x ." One of ordinary skill in the art would not interpret the expression above to be " y divided by x ." As set forth in the interview summary above, the Examiner tentatively agreed with Applicants' position.

While independent claims 11 and 1 are not coextensive in scope, Applicants rely on similar arguments in addressing claim 11 as the Office Action sets forth substantially the same arguments regarding the *Vialle* reference in rejecting claim 11. In view of the arguments set forth above, *Vialle* fails to disclose, teach, or suggest the limitation "wherein the first state parameter is a ratio determined by dividing a number of the first received packets with a number of the first transmitted packets." Furthermore, the *Boer* and *Girardeau* references fail to address this deficiency.

As a separate and independent basis for the patentability of claims 1 and 11, Applicants submit that there is no proper motivation to combine *Vialle* with *Boer* and *Girardeau* as it is not clear how employing repetitions of information for decoding (as taught by *Vialle*) has anything to do with transmission rate adjustments. As such, Applicants believe the rejection is based on improper hindsight.

Indeed, the Office Action combined *Vialle* with the combination of *Boer* and

Girardeau to reject the claim 1 (and claim 11) on the sole basis that "[c]hannel observations ($p(y \text{ divided by } x, \alpha)$), where y is the received symbol, x is transmitted symbol and α is the Rayleigh fading, are derived for received packets and are combined to form a combined channel observation used for subsequent turbo decoding." (Office Action, page 5). This rationale is both incomplete and improper in view of the established standards for rejections under 35 U.S.C. § 103.

In this regard, the MPEP section 2141 states:

The Supreme Court in *KSR* reaffirmed the familiar framework for determining obviousness as set forth in *Graham v. John Deere Co.* (383 U.S. 1, 148 USPQ 459 (1966))... As reiterated by the Supreme Court in *KSR*, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness is a question of law based on underlying factual inquiries. The factual inquiries enunciated by the Court are as follows:

- (A) Ascertaining the differences between the claimed invention and the prior art; and
- (B) Ascertaining the differences between the claimed invention and the prior art; and
- (C) Resolving the level of ordinary skill in the pertinent art.

In addition:

When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention and
- (D) Reasonable expectation of success is the standard with which obviousness is determined.

Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

As reflected above, the foregoing approach to obviousness determinations was recently confirmed by the United States Supreme Court decision in *KSR INTERNATIONAL CO. V. TELEFLEX INC. ET AL.* 550 U.S. 1, 82 USPQ2d 1385, 1395-97 (2007), where the Court stated:

In *Graham v. John Deere Co. of Kansas City*, 383 U. S. 1 (1966), the Court set out a framework for applying the statutory language of §103, language itself based on the logic of the earlier decision in *Hotchkiss v. Greenwood*, 11 How. 248 (1851), and its progeny. See 383 U. S., at 15-17. The analysis is objective:

"Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *Id.*, at 17-18.

Indeed, as now expressly embodied in MPEP 2143, "[t]he **key to supporting any rejection under 35 U.S.C. §103 is the clear articulation of the reason(s) why the claimed invention would have been obvious.** The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. §103 should be made explicit." (*Emphasis added, MPEP 2143*). "Objective evidence relevant to the issue of obviousness **must** be evaluated by Office personnel." (MPEP 2141). "The key to supporting any rejection under 35 U.S.C. §103 is the **clear articulation of the reason(s)** why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. §103 **should be made explicit.** The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that '[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational

underpinning to support the legal conclusion of obviousness.” (MPEP 2141).

Simply stated, the Office Action has failed to at least (1) ascertain the differences between and prior art and the claims in issue; and (2) resolve the level of ordinary skill in the art. Furthermore, the alleged rationale for combining the references is merely an improper conclusory statement that embodies clear and improper hindsight rationale. Applicants further note that the reason expressed by the Examiner for combining the references is based on an incorrect interpretation of the teachings from the *Vialle* reference. As such, the Office Action fails to set forth the required objective indicia appropriate to support the rejection.

In view of the foregoing, Applicants respectfully submit that independent claims 1 and 11 patently define over *Boer*, in view of *Girardeau*, further in view of *Vialle* for at least the reason that *Boer* fails to disclose, teach, or suggest the highlighted features in claim 1 above. Furthermore, Applicants submit that dependent claims 4-8, 10, 12-15, 18-19, and 21-22 are allowable for at least the reason that these claims depend from an allowable independent claim. See, e.g., *In re Fine*, 837 F. 2d 1071 (Fed. Cir. 1988).

B. Dependent Claims 9 and 20

Claims 9 and 20 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Boer*, in view of *Girardeau*, further in view of *Vialle*, further in view of *Adachi*. As set forth above, Applicants submit that independent claims 1 and 11, from which claims 9 and 20 depend, respectively, are patentable over the combination of *Boer*, in view of *Girardeau*, further in view of *Vialle*. Applicants further submit that the *Adachi* reference fails to address the deficiencies expressed above for these references. Claims 1 and 11 are thus patentable over *Boer*, in view of *Girardeau*, further in view of

Vialle, further in view of *Adachi*. As such, dependent claims 9 and 20 are allowable for at least the reason that these claims depend from allowable independent claims. *Id.*

CONCLUSION

Applicants respectfully submit that all pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephone conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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